

AMENDMENTS
(Amendments under Article 11)

To the Commissioner of Patents

1. Identity of the International Patent
PCT/JP2004/016480

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4. Subject of Amendments
Claims

5. Contents of Amendments
Claims 1 to 6 are amended.
Claim 7 is added.

6. Attachments
(1) New pages 16, 17/1 and 17/2 of Claims

CLAIMS

1. (Amended) An alkaline earth metal-containing MFI zeolite catalyst for use in synthesizing a lower hydrocarbon from dimethyl ether and/or methanol, comprising Si/Al atomic ratio ranging from 30 to 400, an alkaline earth metal/Al atomic ratio ranging from 0.75 to 15, and an average particle diameter ranging from 0.05 to 2 μm .

2. (Amended) The Alkaline earth metal containing MFI zeolite catalyst as set forth in claim 1, wherein said alkaline earth metal-containing MFI zeolite catalyst is a proton type.

3. (Amended) A process for preparing an alkaline earth metal-containing MFI structural zeolite catalyst for use in synthesizing a lower hydrocarbon from dimethyl ether and/or methanol, comprising :

(I) a mixing step of dissolving a zeolite raw material solution which contains a SiO_2 source, an aluminum oxide source, an alkaline ion source, and a structure directing agent into a water such that a Si/Al atomic ratio ranges from 30 to 400, and an alkaline earth metal/Al atomic ratio ranges from 0.75 to 15, thereby allowing an alkaline earth metal salt and a zeolite seed crystal be coexistent with each other in aqueous solution thereof,

(II) a synthesizing step of subjecting the resultant mixture obtained in the mixing step (I) to a hydrothermal treatment, and

(III) a drying and calcining step of drying and calcining the reaction product obtained after the synthesizing step (II),

wherein the zeolite seed crystal which is added in the mixing step (I) has an average particle diameter of not more than 1.5 μm .

4. (Amended) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3, wherein the zeolite seed crystal has an average particle diameter of not more than 0.5 μm .

5. (Amended) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3 or 4, wherein said drying and calcining step (III) is further followed by:

(IV) an ion exchanging step of performing an ion exchange of said reaction product into a proton type through an acid treatment or an ion exchange of said reaction product into an ammonium type through an ammonium salt, and

(V) a re-drying and calcining step of drying and calcining again said reaction product after said ion exchanging step (IV), thereby making the target catalyst a proton type.

6. (Amended) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in any one of claims 3 to 5, wherein the additive amount of said zeolite seed crystal is the amount which corresponds to 1 to 60 mass% of the mass of an alkaline earth metal-containing MFI zeolite catalyst which is synthesized without adding said zeolite seed crystal.

7.(Added) A process for producing a lower hydrocarbon from dimethyl ether and/or

methanol, wherein said lower hydrocarbon is an unsaturated hydrocarbon having 2 to 4 carbon atoms, and which comprises contacting said dimethyl ether and/methanol which is a supplied gas with said alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 1 or 2 under a condition of reaction temperature ranging from 400 to 650°C and the weight hourly space velocity (WHSV), which is an amount corresponding to dimethyl ether supplied per unit catalyst mass and per unit time, ranging from 0.025 to 50g-DME/(g-catalyst · hour), thereby making the yield of the carbon atoms which is contained in said lower hydrocarbon to the carbon, atoms which is contained in said supplied dimethyl ether and/or said methanol be not less than 60% by weight.